

Supplementary Information

Plasmonic properties of triangle-shaped silver trimers selectively fabricated by near-field photo-reduction using an apertured cantilever for an atomic force microscope

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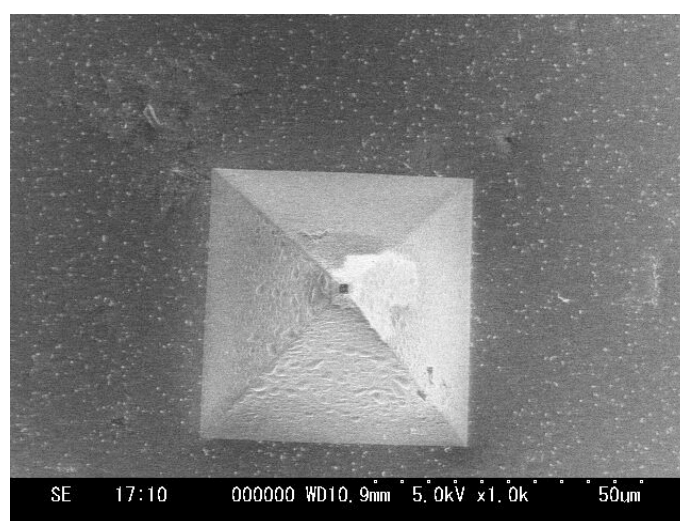


Fig. S1 Scanning electron microscope (SEM) image of an apertured cantilever coupled with an atomic force microscope (AFM).

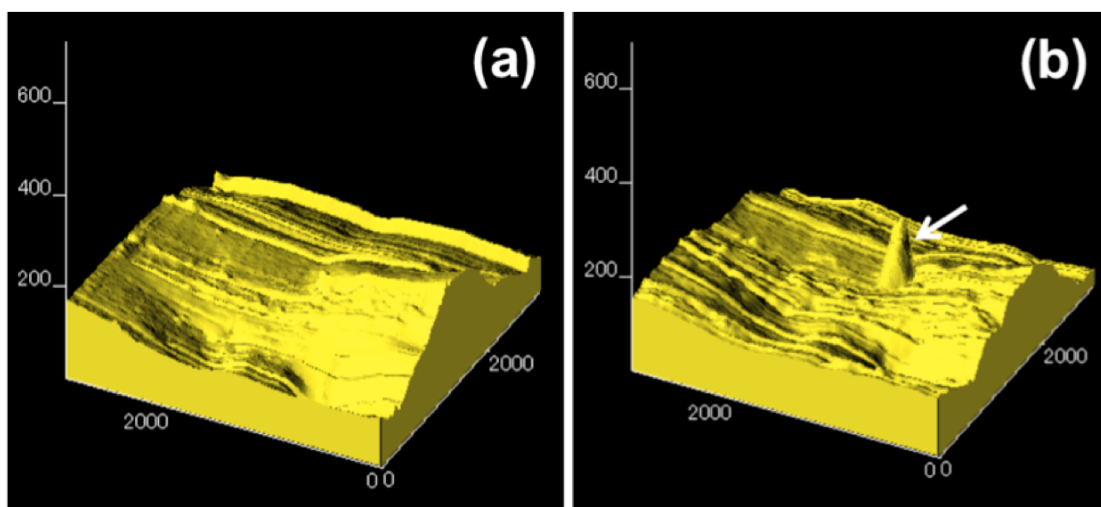


Fig. S2 Three-dimensional AFM image of the same crystal surface of AgNO_3 (a) before and (b) after the near-field photo-reduction. The units are nanometer.

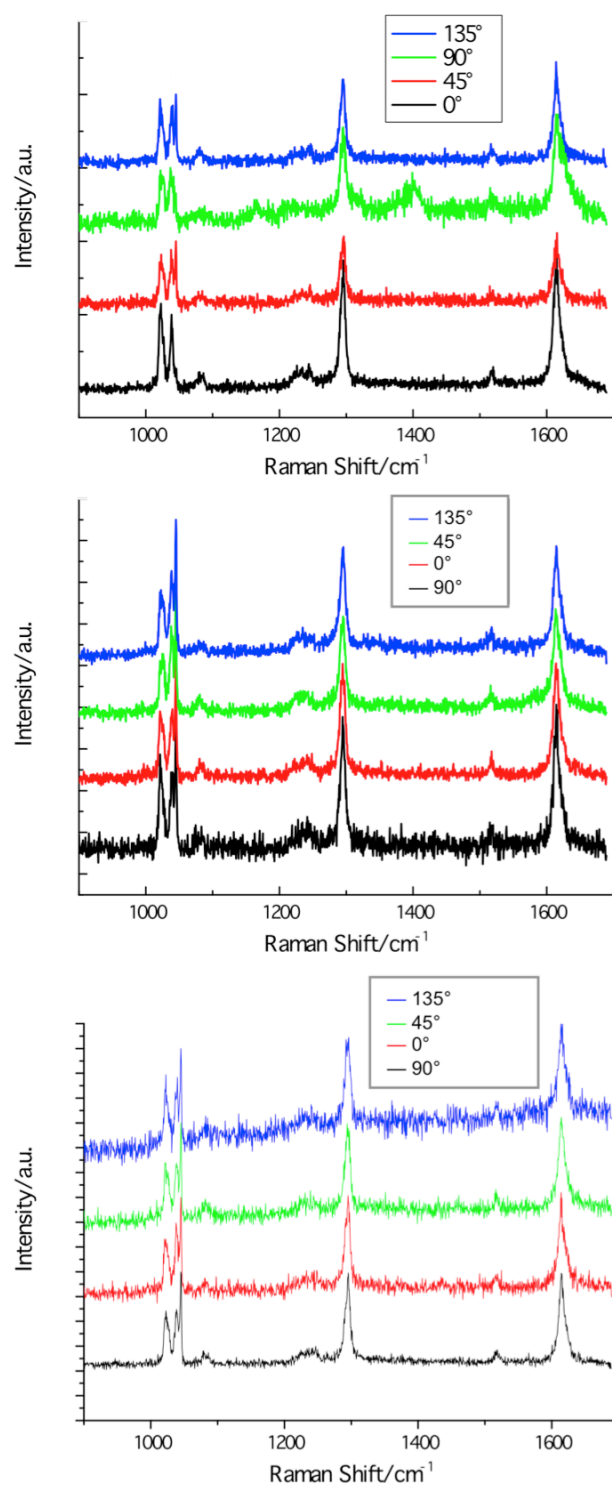


Fig. S3 Polarized SERS spectra from the single L-shaped Ag trimer as shown in Fig. 1 by the irradiation at 514 nm. The peaks at 1027 cm⁻¹ are assigned to the ring-breathing mode of 4,4'-bipyridine adsorbed on metal. The peaks around at 1039 and 1045 cm⁻¹ are assignable to the symmetrical stretching mode of NO₃⁻ at 175 °C and room temperature (see main text).

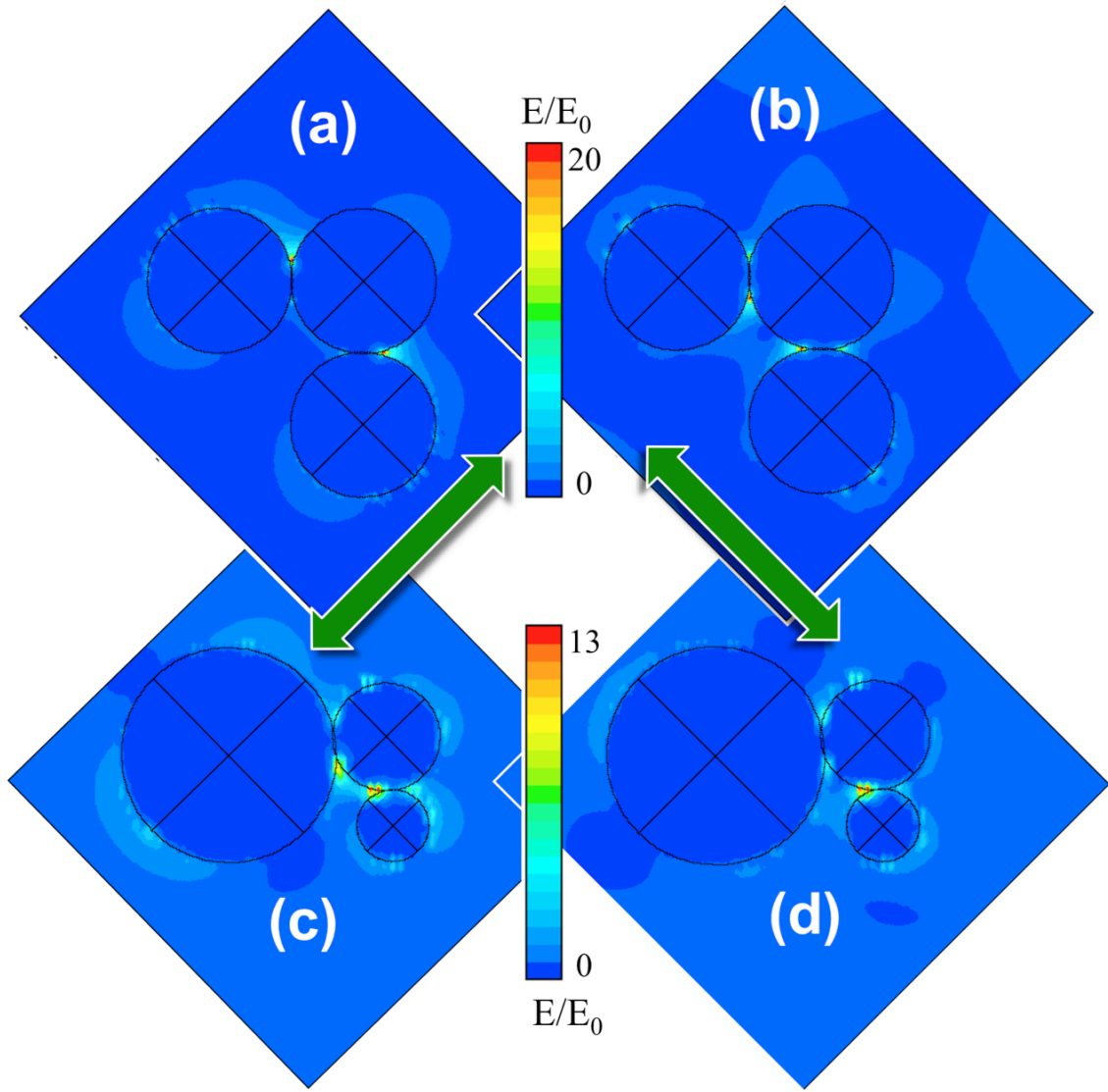


Fig. S4 Calculated spatial distributions of the enhanced electromagnetic (EM) fields around (a,b) the isosceles and (c,d) the observed L-shaped Ag trimers irradiated by the polarization ($\lambda = 514$ nm) at an angle of (a/c) 45° and (b/d) 135° . The intensity at the red point in (d) is slightly stronger than that in (c). The software for a finite-difference time-domain (FDTD) calculation was PLANC-FDTD (Information and Mathematical Science Laboratory Inc., Ver. 6.2). For the calculation of the spatial distribution of EM field, the mesh sizes were set at 3.8 and 10 nm inside and outside the Ag nanoparticles, respectively. For the plasmon resonance scattering spectra as shown in Fig. 3, the mesh size inside them was set at 6.6 nm.